identify the telephone number of a caller, or the location from which a call is being made.

In July 1996, the FCC issued an Order and Notice of Further Proposed Rulemaking (NPRM) on docket #94-102 which addressed some of the concerns presented by these and other organizations. The NPRM requires, among other things, that commercial mobile radio service (CMRS) carriers provide the calling party's number and cell site location information on wireless 911 calls, comparable to the automatic number and location identification (ANI/ALI) now available with traditional wireline 911 systems. The phased implementation is mandated to begin within 12-18 months from the October 1, 1996, effective date of the order. Implementation of wireless ANI/ALI, however, cannot be expected to offer solutions to immediate problems that threaten to overwhelm the wireless 911 system and those who provide emergency response.

Wireless 911 Calls

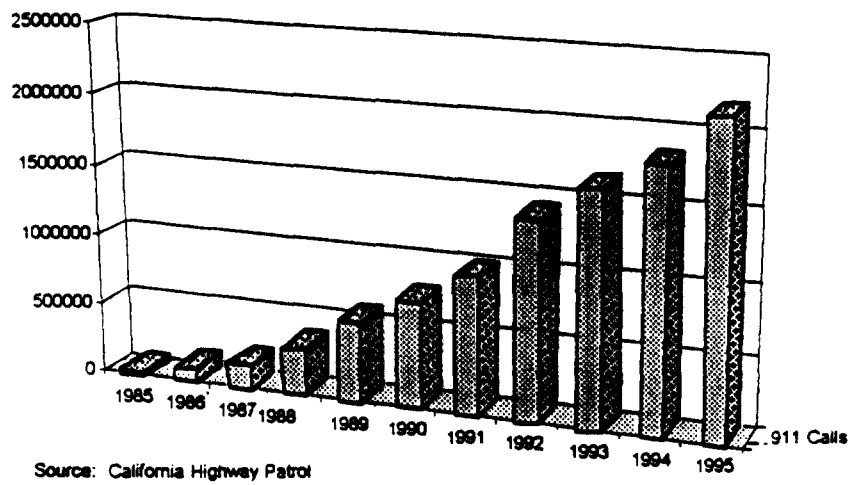
In 1991, Section 2892 was added to the California Public Utilities Code and mandated the CHP to answer all cellular 911 telephone calls. This statute made sense at the time since the majority of cellular phones and requests for emergency assistance were associated with motor vehicles.

The popularity of affordable cellular equipment and service, as well as the fact that 911 was mandated to be a free wireless call, has contributed to the unprecedented increase in incoming telephone traffic to CHP communications centers. Because many of these calls are the responsibility of other allied or emergency response agencies, these entities have likewise seen a sharp increase in wireless 911 calls

and requests for service. Available statistical data substantiates the impact of cellular 911 on the ability of the CHP and allied agencies to provide dependable emergency dispatch service.

For example, in 1985, CHP communications centers received a total of 29,000 wireless 911 calls. In 1995, the number of cellular calls received statewide jumped to 2,176,400—an increase of 7,405 percent (see Chart 1). As the volume of wireless 911 telephone traffic has continued to increase, particularly in metropolitan areas, it has become increasingly difficult to meet public expectations with existing resources.

Chart 1
Volume of Wireless 911 Calls



Source: California Highway Patrol

Compounding this problem is the fact that these millions of calls are not all emergencies, nor are they all calls that require CHP assistance. The explosion in the use of wireless phones has taken them from "car phones" to "personal phones" used by the public to communicate as they do on regular "wireline" phones, including reporting crimes and the need for emergency assistance.

If the CHP receives a cellular 911 call that involves an incident outside the CHP's jurisdiction (fire, ambulance, crimes within city limits, for example) the call must be transferred to the appropriate PSAP for response. The result is a delay in sending the appropriate emergency response where precious seconds can alter the outcome of a particular incident. CHP communications centers currently transfer approximately 20 - 25 percent of cellular 911 calls to local PSAPs for response.

Redundant Calls: Given the mobile nature of cellular phone users, it is not unusual for many to view a particular emergency roadway incident, for example, at nearly the same time. If these people all have access to cellular phones, it is likely most, if not all, will make a 911 call to report the incident. While their willingness to become involved should be lauded, this large spike in call volume reporting on the same incident hampers the ability of call-takers to respond to that particular incident and to any other incident that may occur. Call-takers must answer all 911 calls; there is no way of knowing which call is reporting the same incident and which might be reporting a different problem requiring an immediate response. Again, the result can be delays in sending much-needed emergency assistance.

Misuse-use of 911: There is no standardized definition of "emergency" regarding the legitimate use of 911. The problems arise not from using 911 to vanquish immediate threats to personal or public safety and well-being, but from "grayer" areas where assistance may not be as crucial. Examples would include reporting property crimes where the crime has been committed, the suspect has vanished and no immediate threat to lives or property remains. In these

situations, calling 911 might be personally comforting to the victim, but it may not be the most efficient use of the system.

A more dangerous misuse of the 911 system stems from those who call 911 when no emergency exists at all. Estimates vary as to the number of nonemergency calls received by 911 PSAPs, but it is not uncommon to hear 911 call-takers report that as much as 40 percent of calls received are nonemergency in nature. Although there are myriad examples of these situations, some of the more common include:

- Buying a cellular phone and calling 911 to see if it works.
- Calling 911 in heavy traffic to ask what the delay is and how long before it is cleared.
- Calling 911 and asking to be transferred to another number.
- Calling 911 for current weather and road conditions.
- Calling 911 for directions to destinations in strange surroundings.

Once again, these situations negatively impact personnel and equipment resources. Call-takers must listen to a 911 caller, determine whether or not the call is a true emergency and provide the appropriate response. If no emergency exists, the call-taker must still handle the call by transferring it to the appropriate number, with time again being taken away from those truly in need of emergency assistance.

The number of 911 calls, the delays encountered when trying to reach assistance through the 911 system, and the impact on limited personnel and equipment resources have also been noticed by the media. There have been recent articles printed in the *Sacramento*

Bee[1], the *San Francisco Examiner*[2], *and U.S. News and World Report*[3], for example, that highlight the limitations of the current 911 system and its ability to meet public expectations.

These viewpoints are also supported by a study sponsored by the CHP and the Department of General Services, which indicate an increasing level of dissatisfaction with the current 911 system It is this level of public satisfaction and expectations that guided the Wireless 911 Task Force through its discussions and ultimate development of recommendations.

Stakeholder Analysis

Each of the three task force subcommittees began their discussions with an analysis of who the stakeholders are within the 911 system, what the expectations of these stakeholders are concerning the delivery of emergency services via the 911 system, and what the responsibilities of the stakeholders are for ensuring the proper, efficient, and effective implementation of the 911 system.

The subcommittees listed four main groups of stakeholders:

- The general public and actual users of the 911 system.
- Public safety and law enforcement organizations that provide assistance and respond to 911 calls.

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[1] "Nonemergencies Crowd 911 System," Janine DeFao, *The Sacramento Bee*, September 15, 1996.
[2] "Cellular 911 'On Verge of Collapse,'" Vicki Haddock, *The San Francisco Examiner*, September 1, 1996.
[3] "This is 911...," Gordon Witkin with Monika Guttman, *U.S. News & World Report*, June 17, 1996.*(see Attachment A)*

- Wireless service providers-licensed carriers who supply equipment and access to airtime on a wireless network.
- Wireline providers-incumbent utilities that provide access through the dedicated 911 system as part of the public wireline telephone network.

General Public-911 System Users: For this group of stakeholders, the following expectations, awareness levels, and responsibilities were assumed:

Expectations:

- Unlimited, unrestricted access to 911 service for emergencies.
- Response time to an incident will be initiated within 1.5 minutes of a 911 call being made.
- Responders will be professional, courteous and well-trained.
- There will be no perceived difference between wireless and landline service.
- Service will be uniform throughout the state, regardless of geography or technology.
- Technology will be state-of-the-art. Current technology will last about three years.

Public Awareness:

In general, the public

- is not aware of the differences between the existing landline and wireless 911 call routing systems;

- is not aware that all wireless 911 calls are answered by CHP communications centers;
- has been trained to dial 911 to get help from public safety and law enforcement agencies;
- lacks clear understanding of what constitutes appropriate use of 911.

Responsibilities:

- Costs of the system should be borne by the beneficiaries with minimal or no contribution from other funding sources.
- Use the 911 system responsibly. There is no public policy that imposes penalties for misuse of the 911 system.

Public Safety Organizations: For this group of stakeholders, the following expectations and responsibilities were assumed:

Expectations:

- There will be seamless performance between wireless 911 services and wireline 911 systems.
- Emergency response agencies will be able to recover all allowable costs for participation in the 911 emergency response system.
- Misuse and redundancy will continue, but can be significantly reduced.

Responsibilities:

- Emergency response agencies should actively sponsor and participate in public education efforts to increase user awareness and reduce misuse of the system.
- Agencies should implement appropriate technologies and resource allocation plans to better manage 911 workload.
- Agencies should participate in the development of standards for advances in wireless 911 technologies.
- Agencies should continue to seek reasonable and cost effective solutions and policies to new and continuing 911 system problems.

Wireless Providers: For this group of stakeholders, the following expectations, awareness levels, and responsibilities were assumed:

Expectations:

- The development and implementation of standards and policies consistent with current and subsequent FCC Order should be arrived at through a collaborative effort.
- Economic and technological feasibility.
- Compatible with wireline and PSAPs.
- Liability limitation consistent with protections afforded wireline providers
- Compensation for costs

Responsibilities:

- Comply with FCC order
- Participate in standards development
- Evaluate and pursue solutions and new technologies

Wireline Providers: For this group of stakeholders, the following expectations, awareness levels, and responsibilities were assumed:

Expectations:

- Minimal impact on wireline network
- Compensation for costs
- Compatibility
- Collaborative, workable standards

Responsibilities:

- Participate in standards development
- Cost effective solution
- Share data base standards

Public Policy and Legislation

Current Mandates

A primary concern in this issue is the current law that mandates the CHP to answer all wireless 911 calls regardless of where the call is coming from, or the nature of the emergency. The original intent of this legislation was to assist motorists who, at that time, were

the predominant users of cellular phone services. This remains a valid and commendable concept, but the explosion in wireless telephone use and technology has affected the capability of responsible agencies to respond effectively. The public currently has access to cellular services beyond heavily traveled roadways. It also brings into question whether or not the statute needs to be changed to match the capabilities of current and future technologies.

Definition of Emergency

The lack of a standardized definition of what constitutes a "911 emergency" continues to hamper effective response to true emergencies. Definitions of "911 emergencies" can vary between jurisdictions and sometimes between agencies serving the same population. The extremes range from accepting any call for assistance and treating each call as equal priority, to use of an automatic call-release button to off-load non-emergency calls to a recorded message. Some public safety officials advocate a policy that removes this confusion from the mind of the caller and gives the 911 call-taker (the expert) responsibility for making the decision of whether or not a true emergency exists. Others advocate a definition that would classify emergencies as only those situations that pose an immediate danger to lives or property. Another popular maxim advocates use of 911 "to save a life, report a fire, or report a crime." A consistent, well-publicized definition that removes any ambiguity about what is proper use of 911 could help to reduce the number of inappropriate calls.

Use of Non-emergency Three-digit number

Another possibility for relieving the burden of non-emergency calls on the 911 system is being encouraged by the federal government, including President Clinton. The idea is to initiate

another three-digit number to reach local police in non-emergency situations instead of having to look up or remember the existing seven-digit number.

Although the idea of using "311" for non-emergency assistance was endorsed by President Clinton during a Sacramento visit in July 1996, it does not have the unanimous support of public safety organizations, particularly those that advocate the "one nation, one number" 911 concept.

In public comments to the FCC, proponents of the alternative non-emergency number call it an elegant solution to the growing problem of misuse of the 911 system. Other supportive comments claim the easy-to-remember three-digit number will reduce the use of 911 when the caller is unsure of which agency has jurisdiction and what number to call for that agency. With the 311 concept, calls will automatically route to the designated police jurisdiction for the caller's location.

Opponents to the idea express concern that an alternative number will cause confusion about when to use 911. Others contend the 311 concept will not necessarily reduce the workload for call-takers in communications centers that handle both 911 and non-emergency calls. The number of calls may actually increase because the process for asking for assistance has been simplified and will solicit calls that might not otherwise be made.

Opponents further assert that the public will return to using 911 if 311 response times are unsatisfactory. This may be supported by evidence that callers who fail to get timely answers on existing seven-digit numbers have learned they get a quicker response by

dialing 911, emergency or not. The advent of a three-digit dialing alternative is not likely to alter this perception.

Although the concept of an alternative three-digit non-emergency number deserves consideration, a thorough evaluation of its benefits and detriments needs to be made. Testing of this concept is currently underway in Baltimore, Maryland and implementation is being considered in other cities, including San Francisco and Sacramento. Questions concerning funding, staffing levels, workload impacts, and carrier responsibilities need to be addressed before such a system is fully initiated in California.

Non-initialized Phones

Most consumers who purchase wireless phones also sign up with a wireless service provider in order to make phone calls on their wireless phone at a certain charge per minute. Callers who use 911 are not charged for the call by the service provider—it is a free call. Current state statute[4] mandates that access to the 911 system be free of charge.

This is a sensitive issue among wireless carriers who recognize the importance of having access to 911, but who also recognize the problems associated with those who purchase wireless phones and attempt to make routine phone calls via the 911 system. Recent federal regulations from the FCC (see pg. 8) also include provisions that direct wireless carriers to provide access for all 911 calls from wireless mobile handsets that transmit an electronic identification number, including roamers. Further, they require that processing and

[4] California Public Utilities Code, Section 2892.

transmission of 911 calls not be subject to subscription requirements or similar procedures invoked by the carriers.

Legislation introduced by U. S. Representative Anna Eshoo (D-San Diego) would require the FCC to prohibit commercial mobile services from blocking access to emergency 911 services. The measure is supported by the Ad Hoc Alliance for Public Access to 911, a consumer group that advocates unrestricted access to 911 for wireless phones, whether or not the users subscribe to wireless service. The concept is also supported by the Association of Public Safety Communications Officials, Inc. (APCO).

The National Emergency Number Association agrees that callers should not be blocked when trying to reach 911 services. However, NENA advocates access only for initialized subscribers, believing this is necessary as a means of providing call-back number information and to deter abuse of the system. Although not required by the proposed legislation, the FCC could consider a mechanism to reimburse carriers for the incremental costs involved in providing universal access to the 911 system.

Technology

The popularity of wireless telephones and the challenge to public safety agencies expected to respond to increasing numbers of emergency calls from these phones is not limited to California. The future of wireless technology and its impact on the 911 emergency response system has become the focus of professional and technical organizations and national regulatory agencies. Groups such as NENA, APCO, CTIA, and FCC are all working together to maintain a viable emergency response system nationwide.

In July 1996, the FCC issued an Order and Notice of Further Proposed Rulemaking (NPRM) on docket #94-102 which addresses some of the concerns presented by these and other organizations. The NPRM requires, among other things, that commercial mobile radio service (CMRS) carriers provide calling party number and cell site location information on 911 calls comparable to the number and location information now available with traditional 911 wireline systems.

The wireline 911 network selectively routes 911 calls from regular telephones in fixed locations to one of approximately 485 PSAPs and provides the caller's telephone number and address to the call-taker. The fixed address associated with the telephone number is provided through a query of the telephone company's customer database.

Wireless 911 calls are currently routed through the Public Switched Telephone Network (the system used by the public for routine calling on wireline phones), not the dedicated 911 network. Instead, when a caller dials 911 from a cellular telephone, the cellular switch translates the three digits (911) to the designated emergency number for the CHP communications center responsible for the area where the call originated.

Implementation of the FCC's directive will be accomplished in two phases. The first phase, which will encompass wireless number identification, is mandated to begin within 12-18 months after the effective date of the FCC's order (October 1, 1996).

Phase II (location identification information) is scheduled to be accomplished within five years after the effective date of the order, and will pinpoint a wireless caller's location to within 125 meters.

Although the provisions contained in the FCC's order will do much to alleviate major concerns with the 911 system, implementation of wireless ANI/ALI cannot be expected to offer solutions to immediate problems that threaten to overwhelm the cellular 911 system and those who provide emergency response.

Provisions of the FCC's directive are subject to the availability of local funding and the ability of local PSAPs to accept and utilize the signal information provided by wireless carriers.

Technology is available to capture a calling party's wireless number and cell site identification, but it is not yet possible to transmit this information through the 911 network or have it received by CHP communications centers or local PSAPs. The wireline networks and PSAPs are on schedule to upgrade or convert systems to implement these capabilities by April 1998. The CHP is currently exploring available technologies for a standardized communications center telephone system that could provide more immediate solutions to wireless 911 problems.

To complement wireless number and location identification, the ability to identify the cell site from which a call is originating is available now. With this technology, wireless calls that are clearly emanating from outside CHP jurisdiction would automatically be answered by the appropriate PSAP.

The benefits of this selective call routing concept would include expeditious delivery of calls to the appropriate responder and relieve the CHP from the burden of screening calls that ultimately belong to another public safety agency. This is especially important in light of the anticipated growth of wireless communications, which is expected to double in the next three years.

The CHP would have to be involved in setting criteria for call routing and in selecting proposed cell sites or sectors that do not cover state highways, or those that are located totally in rural or downtown areas outside of CHP jurisdiction. In addition, agreements would have to be implemented between the CHP, DGS, and PSAPs that would be receiving these non-CHP wireless 911 calls.

Funding of the 911 System

In California, the 911 system is funded through a surcharge on intrastate telephone traffic, paid by subscribers to both wireline and wireless telephone services. The surcharge is collected by telephone companies, remitted to the Board of Equalization, and deposited in the state's Emergency Telephone Number Account. This account, and the dedicated 911 system itself, are administered by the DGS' Telecommunications Division.

The 911 surcharge rate is limited by statute to no more than .75 percent of a customer's telephone bill.[5] The current surcharge rate is .72 percent of the amount billed for intrastate calls which generates approximately $76 million annually for resources and equipment associated with maintaining the 911 system. Although the size of the fund has grown due to increased numbers of cellular users, there is no indication that future revenue growth will be sufficient to meet anticipated costs for mandated upgrades to the 911 system. As the existing customer base gradually shifts from use of traditional wireline services to reliance on wireless communications, the revenue stream can be expected to level off.

[5] California Revenue and Taxation Code, Section 41030.

PSAPs are able to receive reimbursements from the 911 fund for personnel and equipment costs associated with operating and maintaining the 911 system. Although the $76 million generated by consumer telephone surcharges is intended to cover these costs, the actual costs of the 911 system are much higher.

True costs of 911 wireless are being borne by a variety of funding sources in addition to the state's Emergency Number Account, including the state Motor Vehicle Account and local government budgets.

Prior to the implementation of the current wireline 911 system, local agencies were reimbursed for a percentage of their recurring personnel costs based on the number of 911 calls transferred to other agencies. With the implementation of caller number and address identification, this reimbursement was eliminated because this information reduced the number of misrouted calls and expedited transfers, thus reducing call handling time. Still, personnel costs incurred by local governments to provide 911 services are estimated at $81 million, as indicated by a telephone survey conducted by DGS.

Policy for 911 funding does not specifically address wireless 911 or the role of the CHP as a recipient public agency for wireless 911 calls. However, since there is no "selective routing" or ability to identify numbers or location of cellular 911 calls, the CHP is considered to have a "basic" 911 system and is currently the only agency receiving any reimbursement for personnel costs. Personnel costs not covered by 911 reimbursement policy, but still associated with responding to wireless 911, are borne by the Motor Vehicle Account.

In addition to the allowable equipment costs, the Wireless Task Force viewed the "allowable cost window" for the 911 system to begin with those personnel who receive an incoming 911 call and conclude when the call is dispatched to the appropriate response agency. With this framework in mind, the following cost must be considered when determining the cost of the entire 911 system:

- Personnel (call-takers and dispatchers for 911 calls).
- Customer Premise Equipment (CPE)- Equipment used by PSAPs.
- Payments to utilities to upgrade and maintain wireline network infrastructure.
- Estimates for wireless infrastructure required to provide automatic number identification (ANI) and automatic location identification (ALI).

Personnel

The DGS 911 Program recently conducted a random survey of 21 PSAPs in cities and counties whose populations totaled 8,283,275 - roughly 25 percent of the total state population. Annual personnel costs for call-taker/dispatcher positions reported by the 21 agencies surveyed totaled approximately $37.8 million- (1,013 positions, at an average annual salary and benefit cost of approximately $37.2 million). Based on this survey, the estimated annual statewide personnel costs for 475 local PSAPs could total more than $150 million. Of this total, approximately $81 million may be directly attributable to 911 call-taking responsibilities, none of which is subject to reimbursement from the 911 fund.

Comparable annual personnel costs for CHP call-taker/dispatcher positions in all 24 communications centers total approximately $29 million, which is funded by the state Motor Vehicle Account. CHP annual personnel costs directly attributable to the cellular 911 workload statewide is approximately $8.18 million.

Of this total, CHP is reimbursed for a percentage of personnel costs based on the number of cellular 911 calls *transferred* to other PSAPs. In 1995, the CHP was reimbursed $1.8 million from the 911 fund for personnel costs. Reimbursements in FY 95/96 totaled $2.2 million, and projected reimbursement for FY 96/97 is $2.4 million.

The 911 surcharge also provides partial funding for 58 County Coordinators who help maintain the Master Street Address Guide (MSAG) used for the ALI data base. It also pays for DGS 911 Program staff (currently 12 positions) and administrative costs for the Board of Equalization to collect the surcharge. These expenditures total roughly $3.6 million.

Customer Premise Equipment

Local PSAPs are reimbursed for costs associated with installing and maintaining telephone systems and 911 equipment required to receive ANI/ALI information provided through the wireline 911 network. This money is for purchasing or leasing equipment from telephone companies or selected vendors. The CHP is not currently receiving reimbursement for telephone systems/equipment.

DGS has budgeted $4.4 million in FY 97/98 for wireline network and CPE upgrades and anticipates an additional $5 million will be required in FY 98/99 to provide for 10-digit ANI/ALI and Phase I cell site location technology mandated by FCC Order 94-102.

Utility Payment for Trunk Lines

These include annual recurring costs paid to public utilities for installation, maintenance and use of the wireline 911 network and total approximately $68 million, or 89 percent of the annual 911 program budget. This includes reimbursement to local PSAPs for the charges incurred for dedicated 911 line trunks used to selectively route wireline 911 calls through the 911 network. Since PSAPs are required to have a separate seven-digit emergency number, the program also pays the cost of these lines. The CHP currently receives reimbursement for some emergency telephone lines.

Estimate for ANI/ALI

The 911 Program budget for FY 97/98 includes $4.4 million additional funding for necessary wireline network upgrades and upgrades to call-taker equipment required to process 10-digit ANI and cell site location information.

The total cost of implementing wireline and wireless system technologies to accomplish the FCC mandates cannot be estimated until standards and implementation methodologies are determined. It is anticipated that wireless carriers will seek reimbursement for capital and operating costs attributable to compliance with the FCC Order. However, it is premature to estimate costs until standards are established. At that time, more specific cost estimates and implementation timelines can be made.

Given these parameters of the 911 emergency response system, the actual costs of equipping and maintaining an effective and efficient program are estimated at $165 million annually, and could conceivably approach $200 million annually (see Table 1).

Table 1

911 Fund Expenses and Revenue

1995

(Dollars in millions)

	Expenses	Revenue
911 Call-taking	$89.18	
Utility infrastructure	68.00	
Communications Center Equipment	8.00	
911 Surcharge		$76.00
Other Sources:		
MVA Account		8.18
Local Taxes		81.00
Total	$165.18	$165.18

Note: Costs do not reflect needed upgrades for technology from FCC order. Personnel costs from Motor Vehicle Account and local tax base are insufficient to provide consistent service in compliance with 911 policy and operations guidelines.

Recommendations

Following the analysis of issues related to public policy and legislation, technology, and funding options, the task force developed recommendations that are grouped in the following categories: public education, efficient call direction, funding, technology, non-initialized phones, and a national non-emergency number.

A. Public Education

1. Continue a wireless public education group for statewide public education to:

a. Publicize proper procedures for reporting emergencies.

The information provided to carriers when agreements are made to handle 911 calls from their subscribers should be distributed with every handset and reiterated frequently in newsletters, bill stuffers, messages on hold, and at every opportunity in press releases. Carriers, as well as the public safety/law enforcement community should recognize the benefits of a consistent message and share a long-term commitment to speak with a single voice when it comes to publicizing procedures for the use of 911.

b. Encourage sponsorship by both private industry and public safety.

Appropriate funding from the 911 program budget and solicit contributions from public/private sponsors. Affected groups should be encouraged to participate in the development, publication, and distribution of campaign information.

2. **Expand efforts to reduce numbers of redundant, non-emergency, and other inappropriate 911 calls.**

The efforts of the existing Cellular 911 Education Task force should be expanded to include development and dissemination of more detailed information to advise the public how these types of calls impact the system. The membership of this group and the breadth of the campaign should also be expanded to include new PCS carriers and their users.

3. **Define "emergency."**

Invite public safety/ law enforcement agencies/ call-takers to participate in developing a clear definition of emergency and recommendations for policy regarding proper use of the 911 system.

B. Efficient Call Direction

The goal of these recommendations is to ensure that all 911 calls are directed to the appropriate agency. The public benefits when their 911 call is initially routed to the appropriate emergency center. Currently, all cellular 911 calls are initially routed to the CHP; about 25 percent of these calls properly belong to a different public safety agency which the CHP must then transfer to the agency. The delays inherent in this transfer process impedes the public's ability to receive help quickly.

1. **Conduct pilot programs to demonstrate routing concepts.**

Initiate pilot projects to evaluate use of alternative routing plans. Committee recommends a series of pilot programs to test selective call routing and the Phase I number and cell site location

prior to deciding on a particular course of action. Pilots should reflect different topographical, demographic, and technological possibilities.

2. If warranted, after evaluation of pilot programs, propose legislation to implement selective routing plan statewide.

Currently, Public Utilities Code Section 2892 mandates that all cellular 911 calls be routed to the nearest CHP communications center. If pilot programs and new technologies prove that there are better ways to ensure each call reaches the appropriate emergency center, then a review of Section 2892 might be warranted to ensure it best meets the needs of the public, given the capabilities demonstrated by the pilot projects.

3. Further improve routing accuracy as technology becomes available (ANI/ALI).

As ANI/ALI becomes implemented statewide per the FCC's order, it is likely the call direction capabilities of the 911 system will be significantly improved. As stated above, California's policies regarding the routing of 911 calls should take advantage of these and other technologies as they become available to more effectively handle the public's 911 calls.

4. Liability of wireless 911 should be consistent with wireline 911.

Cellular 911 should, to the greatest extent possible, mirror the automatic location and number information capabilities of the wireline 911 system. Similarly, the wireless industry should have the same level of liability protection with regard to call routing and automatic information provided with a 911 call as presently exists with wireline calls/carriers.

C. Funding

1. Funding should be based on a beneficiary derived method.

The true cost of the 911 system is greater than statutorily recognized and much of the actual cost is being paid from sources other than the 911 surcharge. Costs of the system should be borne by beneficiaries with minimal or no contribution from other funding sources. A beneficiary-based system would allocate the costs of the 911 system to those who benefit from the services.

A beneficiary-based system also contributes to increased resources being made available as the demand for 911 services increases (i.e., as more phones are available the demand for 911 increases and revenue would rise accordingly).

Currently, 911 costs properly include the 911 call delivery infrastructure for voice and associated data transmission, 911 PSAP call-taking equipment, and personnel costs directly attributable to the answering of 911 calls. The "true" costs of the 911 system include the 911 telecommunications infrastructure, emergency center call answering equipment and communications center personnel costs incurred directly in the answering of these calls. Insufficient capability in any of these elements results in delayed or lost 911 calls and a negative impact on the public's safety.

Presently, call-taking personnel used directly to answer 911 calls are supported by local taxes and the Motor Vehicle Account. These revenue sources have proven insufficient to meet the 7,405 percent rise in cellular 911 calls since 1985. Continued reliance on personnel funding outside the 911 surcharge will likely result in a